Water Quality Data Elements for Reporting Results of Population/Community Biological Assessments Version 3.3 September 2003

Data Elements	Definition
1.0 Contact Information Module	See Chemical/Microbiology Data Elements
2.0 Results Module	
2.1 Result Value	
2.1.1 Result or Endpoint Value	See Chemical/Microbiology Data Elements The data being reported: index score, metric value, density, biomass, etc.
2.1.2 Unit of Measure	See Chemical/Microbiology Data Elements; e.g. count, mg, "unitless score"
2.1.3 Result Type	e.g. Index, metric, ash-free dry weight, length
2.1.4 Name of metric/index used	Metric = measure of biological attribute (e.g. EPT, % lithophils, % Sensitive Diatoms) index = aggregated number used to judge condition (e.g. IBI, RBP)
2.1.5 Confidence Intervals	The values representing the lowest and highest confidence level
2.1.6 Confidence Level	The percent confidence associated with the confidence levels; i.e., 95%, 99%
2.1.7 Method of Comparison	The basis for comparison that yielded the sample result or endpoint. For example, compared to reference condition, upstream sample.
2.1.8 Statistical Analysis Used	Statistical test(s) used to obtain result or endpoint value (e.g., t-test, RIVPACK, ANOVA)
2.1.9 Modifications to method if any	Text describing alterations to published methods; metric substitution, etc.
2.1.10 Method citation	Reference citation (preferably published) for assessment method or metric calculation (including formula) used
3.0 Reasons for Sampling Module	
3.1 Reason for Sample Collection	See Chemical/Microbiology Data Elements
3.2 Sampling Design Used	Type of sampling design used to choose sites for sample collection. Includes: probabilistic, stratified-random, targeted, systematic
3.3 Data and/or Measurement Quality Objectives	Brief summary of MQOs in relation to biological analysis; for example, sample precision, RSD ≤ 20%.
4.0 Date/Time Module	
4.1 Sample Collection Start Date	See Chemical/Microbiology Data Elements
4.2 Sample Collection Start Time	See Chemical/Microbiology Data Elements
4.3 Sample Collection End Date	See Chemical/Microbiology Data Elements
4.4 Sample Collection End Time Measure	See Chemical/Microbiology Data Elements
4.1 Sample Collection Start Date	See Chemical/Microbiology Data Elements
5.0 Sample Location Module	See Chemical/Microbiology Data Elements
6.0 Sample Collection Data Module	
6.1 Sample Type	See Chemical/Microbiology Data Elements
6.2 Media Sampled	See Chemical/Microbiology Data Elements

6.3 Sample Collection Temperature	See Chemical/Microbiology Data Elements
6.4 Sample Identification	See Chemical/Microbiology Data Elements
6.5 Sample Collection Method	
6.5.1 Sample Collection Device	e.g. D-frame net, artificial substrate, seine, electroshocker
6.5.2 Written Sampling Method Citation	Reference citation (preferably published) for sampling method used.
6.5.3 Certification/Training Status Of Sampler Personnel	Text providing any certification or experience level of personnel sampling: e.g. agency-trained/certified personnel.
6.5.4 Sample Composite Method	Text indicating the way in which samples were composited in the field prior to processing, if any: e.g. Depth-integrated composite, time-integrated composite, area-integrated, habitat-integrated, none.
6.6 Sample Processing	
6.6.1 Container type	See Chemical/Microbiology Data Elements
6.6.2 Container color	See Chemical/Microbiology Data Elements
6.6.3 Container size	See Chemical/Microbiology Data Elements
6.6.4 Sample collection filtering code	See Chemical/Microbiology Data Elements
6.6.5 Sample collection filtering comment text	See Chemical/Microbiology Data Elements
6.6.6 Chemical preservation method	See Chemical/Microbiology Data Elements
6.6.7 Chemical preservation method comment	See Chemical/Microbiology Data Elements
6.6.8 Temperature Preservation Method	See Chemical/Microbiology Data Elements
6.6.9 Chemical manipulation of the sample	Text indicating chemical modification of the sample prior to testing, if any; e.g., pH adjustment, dechlorination.
6.6.10 Field Or Lab Processing	Indicate whether samples were processed in the field or lab
6.6.11 Initial Device Used	Indicate equipment used for initial processing such as screens, sieves, splitters.
6.6.12 Subsampling Method	Text indicating method used to obtain subsamples for testing, if any: random aliquot
6.6.13 Homogenization Method	Text indicating how sample was mixed prior to processing, if any: shaker, manual stirring?
6.6.14 Compositing Method	Text indicating the way in which samples were composited during processing, if any.
6.6.15 Written Protocol Citation	Citation for method used in sample processing.
6.6.16 Sample Storage Time	Time, in days, over which sample was stored prior to processing.
6.7 Sample Volume	See Chemical/Microbiology Data Elements
6.8 Sample Weight Collected	See Chemical/Microbiology Data Elements
6.9 Area or Volume Sampled	Area of media sampled. For example, 1 square

	meter of stream bottom was sampled
7.0 Sample Analysis and QC Module	
7.1 Organism Identification	
7.1.1 Field or lab identification	Indicate whether organisms were taxonomically identified in the field or lab
7.1.2 Device used	Indicate equipment used for identification such as hand lens, dissecting scope
7.1.3 Organism Preparation	Indicate how organisms were prepared prior to identification: dissection, slide-mounting, rose bengal staining, etc.
7.1.4 Organism Classification	
7.1.4.1 Taxonomic resolution	Indicate taxonomic level to which organisms are identified
7.1.4.2 Taxonomic Citations	Taxonomic keys (preferably published) used as references in the identification process
7.1.4.3 Taxonomic name	If applicable, see WQDE 2.2.1 - 2.2.2
7.1.4.4 Taxonomic Identifier	If applicable, see WQDE 2.2.3 – 2.2.4
7.1.5 Taxonomic verification procedures	Text describing how taxonomic identifications are confirmed and cross-checked
7.2 Data Measurements	Quantitative measures of individual organisms (for microbiological assessments see WQDE's
7.2.1 Field or lab measurement	Indicate whether result was measured in the field or lab
7.2.2 Device used	Indicate equipment used to collect individual measurements
7.2.3 Unit of measurement	
7.2.4 Method used	If applicable
7.2.5 Method citation	If applicable
7.3 Sample Size	See Chemical/Microbiology Data Elements
7.4 Composite Sample	See Chemical/Microbiology Data Elements
7.5 Analytical (Test) Precision	
7.5.1 Sample Precision	See Chemical/Microbiology Data Elements; e.g., duplicate C.V.
7.6 Certification/Acceditation	see NELAP/NELAC Accreditation module if applicable (still needs to be developed)
7.7 Taxonomic QC measure	e.g., % agreement in QC samples
7.8 QA/QC Exception Flags (Test Acceptability Criteria Met?)	See Chemical/Microbiology Data Elements
7.9 QA/QC Exception Comment (Test Acceptability Notes)	Text indicating any comments or clarifications concerning how the data met or didn't meet certain acceptability criteria
7.10 QA/QC Comment Field	